

CLAIMS

1. A fuel cell temperature control apparatus controlling a temperature of a fuel cell disposed in an underfloor portion of a vehicle, comprising:

5 a coolant circuit permitting coolant, by which a fuel cell is cooled, to flow through a heat exchanger disposed in a motor room located at a front portion of a vehicle;

a bypass circuit connected to the coolant circuit and permitting the coolant to bypass the heat exchanger; and

10 a coolant pump disposed in the coolant circuit between the fuel cell and the bypass circuit so as to circulate the coolant,

wherein the bypass circuit and the coolant pump are mounted in an underfloor portion of the vehicle at a position rearward of the motor room.

2. The fuel cell temperature control apparatus according to claim 1, further comprising an ion removal filter for removing ions from the coolant.

15 3. The fuel cell temperature control apparatus according to claim 2, wherein the ion removal filter is disposed in the bypass circuit.

4. The fuel cell temperature control apparatus according to claim 2, wherein the ion removal filter is disposed in a branch circuit that is branched off from the coolant circuit at a discharge side of the coolant pump and connected to the coolant circuit at an intake side of the coolant pump.

20 5. The fuel cell temperature control apparatus according to claim 4, wherein the ion removal filter is disposed in the motor room.

6. The fuel cell temperature control apparatus according to claim 5, further comprising a coolant reservoir tank disposed in the coolant circuit at the motor room,

25 wherein the coolant passing across the ion removal filter is delivered to the coolant reservoir tank.

7. The fuel cell temperature control apparatus according to claim 1, further comprising an air heat exchanger disposed in the coolant circuit downstream of the bypass circuit to perform heat exchange with air to be supplied to the fuel cell.

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8. The fuel cell temperature control apparatus according to claim 1, further comprising a hydrogen heat exchanger disposed in the coolant circuit upstream of the bypass circuit to perform heat exchange with hydrogen to be supplied to the fuel cell.

5 9. The fuel cell temperature control apparatus according to claim 1, further comprising a combustor heat exchanger disposed in the bypass circuit to perform heat exchange with a combustor in which exhaust hydrogen expelled from the fuel cell is combusted.

10 10. The fuel cell temperature control apparatus according to claim 1, wherein the heat exchanger includes a radiator by which the coolant is cooled by a running wind of the vehicle.

11. The fuel cell temperature control apparatus according to claim 10, wherein the heat exchanger includes an intermediate heat exchanger disposed between the radiator and the fuel cell.

15 12. The fuel cell temperature control apparatus according to claim 1, wherein the fuel cell is installed in an accommodating member that is detachable from a vehicle body.

13. The fuel cell temperature control apparatus according to claim 12, wherein the bypass circuit and the coolant pump are mounted in the accommodating member.

14. A fuel cell temperature control apparatus controlling a temperature of a fuel cell disposed in an underfloor portion of a vehicle, comprising:

25 circulation means for circulating coolant, by which a fuel cell is cooled, through a heat exchanger disposed in a motor room located at a front portion of a vehicle;

bypass means for bypassing the heat exchanger with respect to the coolant, the bypass means being connected to the circulation means; and

30 pump means for pumping the coolant, the pump means being disposed in the coolant circuit between the fuel cell and the bypass means so as to circulate the coolant,

wherein the bypass means and the pump means are mounted in an underfloor portion of the vehicle at a position rearward of the motor room.